

REMARKS/ARGUMENTS

Favorable consideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1-12 are pending in the application, with Claims 7-12 added by the present amendment.

In the outstanding Office Action, the drawings were objected to under 37 C.F.R. 1.83(a); Claims 1-6 were rejected under 35 U.S.C. § 103(a); Claim 1 was rejected under 35 U.S.C. § 103(a) as being unpatentable over the prior art figure 1 of the instant application in view of Kagawa et al. (JP 2000-286492), or Boot (U.S. Patent No. 6,097,523), or Ryu et al. (U.S. Patent No. 6,330,384 B1); Claims 2-3 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the prior art figure 1 of the instant application in view of Kagawa et al. (JP 2000-286492), and further in view of Wagener et al. (U.S. Patent No. 5,875,203); Claim 4 was rejected under 35 U.S.C. § 103(a) as being unpatentable over the prior art figure 1 of the instant application in view of Kagawa et al. (JP 2000-286492) and further in view of Wagener et al. (U.S. Patent No. 5,875,203) and further in view of Fukushima et al. (U.S. Patent No. 6,198,570 B1); Claim 5 was rejected under 35 U.S.C. § 103(a) as being unpatentable over the prior art figure 1 of the instant application in view of Kagawa et al. (JP 2000-286492) and further in view of Wagener et al. (U.S. Patent No. 5,875,203) and further in view of Alphonus et al. (U.S. Patent No. 5,764,405); Claim 6 was rejected under 35 U.S.C. § 103(a) as being unpatentable over the prior art figure 1 of the instant application in view of Kagawa et al. (JP 2000-286492) and further in view of Mathis (U.S. Patent No. 4,726,644).

New Claims 7-12 are method claims substantially corresponding to the apparatus recited in original Claims 1-6. No new matter is added.

Applicants acknowledge with appreciation the personal interview between the Examiner, the Examiner's supervisor and Applicant's representative on April 15, 2005. During the interview, arguments about the applicability of the Kagawa, Boot, and Ryu to the claimed inventions were presented. The Examiners acknowledged that the Official Action improperly asserted that Ryu inherently taught Applicants' claimed bandpass filtering. The Examiners also acknowledged that the rejection based on Boot was defective because it included no motivation to combine Boot with Applicant's background art. Also, the Examiners acknowledged that the objection to the drawings regarding the optical amplifier was improper.

Applicants have filed amended Figures labeled as "Background Art." Applicants traverse the objection to the drawings and note that the claimed optical amplifier is shown in Applicants' original figures (e.g., amplifiers 12a and 12b of Figure 3). See also Applicants' specification at page 30, lines 29-30.

Briefly recapitulating, Claim 7 is directed to a method for transmitting a wavelength division multiplexed optical transmission. The method includes a) modulating a plurality of laser signals having inherent wavelengths with a plurality of data signals and outputting a plurality of modulated optical signals; b) amplifying a spontaneous emission light signal and outputting an amplified spontaneous emission light signal; c) setting an occupied wavelength band of the modulated optical signals; d) setting a neighboring wavelength band of the occupied wavelength band as a filtering wavelength band; e) band filtering the amplified spontaneous emission light signal; f) outputting a non-modulated spectrum slice optical signal; g) multiplexing the non-modulated spectrum slice optical signal output with the modulated optical signals; and h) transmitting a multiplexed optical signal. Claim 1 is directed to a corresponding apparatus. Applicants' claimed invention allows for cost-

effective growth in the size of wavelength division multiplexing and optical transmission devices.¹

Applicants Admitted Background Art (Figures 1-2) describes optically multiplexing optical signals with a first and second dummy optical signal to produce a set of optical signals bounded by a first and second dummy signal. However, Applicants Admitted Background Art does not disclose or suggest Applicants' recited steps of

- amplifying a spontaneous emission light signal and outputting an amplified spontaneous emission light signal;
- band filtering the amplified spontaneous emission light signal;
- outputting a non-modulated spectrum slice optical signal;
- multiplexing the non-modulated spectrum slice optical signal output with modulated optical signals; and
- transmitting a multiplexed optical signal (that includes the non-modulated spectrum slice).

Figure 3 of Kagawa, cited in the Official Action, describes a wide band light source 1 generating continuous light beams having the wavelength components of wide bands and connected to a coupler 4 that is connected to a bandpass filter 5 which is then connected to an optical amplifier 3. The sequence of Figure 3 of Kagawa is opposite of Applicants' claimed invention in that Kagawa filters and then amplifies while Applicants' claimed invention (see Applicants' Figure 3) amplifies and then filters. Furthermore, Applicants traverse the finding that ASE 5 shown in Figure 3 of Kagawa is equivalent to Applicants claimed optical amplifier.

Finally, Applicants submit Kagawa is not a valid reference under 35 U.S.C 102 or 35 U.S.C. 103. Kagawa was published on October 13, 2000. The European counterpart to

¹ Specification, page 5, line 30 – page 7, line 9.

Kagawa (EP 1024541, filed herewith via IDS) was published on August 2, 2000. However, Applicants' PCT filing date is July 31, 2000, which precedes the filing date of both Kagawa references. Thus, Kagawa is not a valid reference under 35 U.S.C 102 or 35 U.S.C. 103.

Boot describes an optical stabilization system having a signal source (1) connected to a transmission line (2) and a noise source (3). The signal source (1) comprises a laser having a number of laser modes within a first wavelength band for generating an optical transmission signal (S). The noise source generates a narrow-band noise signal which is inserted into the transmission line via coupling means (5) and is injected into the laser of the signal source (1). The noise signal forces the laser to operate in a laser mode within the noise band. Via a power distributor (11), a portion of the noise signal can also be injected into a laser of a further signal source (9) for stabilization in a laser mode within the same noise band. Any signals outside the noise band are removed from the transmission signal by a narrow-band filter (8). The stabilization system is applied in passive optical networks for groupwise wavelength assignment to network terminals. The noise source (3) includes an optical amplifier (6) and a tuneable, narrow-band Fabry-Perot filter (7). However, Boot does not disclose multiplexing the non-modulated spectrum slice optical signal output with modulated optical signals. In Boot, the signals are combined in coupler 5.

Ryu describes a high-power and wide-band fiber optic light source including a first rare-earth-doped optical fiber, a second rare-earth-doped optical fiber, an optical coupler coupled between the first and second rare-earth-doped optical fiber for transmitting the input pumping light to the second rare-earth-doped optical fiber, and a pumping light source adapted to supply pumping light, as the input pumping light, to the optical coupler. However, as acknowledged during the interview, Ryu fails to disclose or suggest bandpass filter.

The Official Action states that bandpass filtering is inherent in Ryu. Applicant respectfully submits that the assertion of inherency is insufficient to show that Ryu inherently

teaches the claimed thickness indicator because the rejection fails to show “that the alleged inherent characteristic necessarily flows from the teachings of the applied prior art”²

However, the Official Action provides no rationale for this finding of inherency. “The fact that a certain result may occur or be present in the prior art is not sufficient to establish inherency of that result or characteristic.”³ “To establish inherency, the extrinsic evidence ‘must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.’”⁴ Because the Official Action provides no explanation of why Applicants’ claimed features are inherent, Applicants submit the rejection is improper.⁵

MPEP §706.02(j) notes that to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Also, the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant’s disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). Applicants submit that the Official Action does not present a

²See MPEP 2112 (emphasis in original) (citation omitted). See also same section stating that “[t]he fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic,” (emphasis in original). See also *In re Robertson*, 49 USPQ2d 1949, 1951 (Fed. Cir. 1999) (“[t]o establish inherency, the extrinsic evidence ‘must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill,’” citing *Continental Can Co. v. Monsanto Co.*, 948 F.2d 1264, 1268, 20 USPQ2d 1746, 1749 (Fed. Cir. 1991); and “[i]nherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient,” *Id.* at 1269 (citation omitted)).

³ *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1995, 1957 (Fed. Cir. 1993).

⁴ *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999).

⁵ MPEP § 2112, IV “Examiner must provide rationale or evidence tending to show inherency.”

prima facie case of obviousness because there is suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings.

In effect, the outstanding rejection does little more than attempt to show that parts of the inventive combination of Claim 1 were individually known in other arts and to suggest that such a showing is all that is necessary to establish a valid case of *prima facie* obviousness. The PTO reviewing court recently reviewed such a rationale and dismissed it in *In re Rouffet*, 149 F. 3d 1350, 1357, 47 USPQ2d 1453, 1457-58 (Fed. Cir. 1998) as follows:

As this court has stated, "virtually all [inventions] are combinations of old elements." *Environmental Designs, Ltd. v. Union Oil Co.*, 713 F.2d 693, 698, 218 USPQ 865, 870 (Fed. Cir. 1983); see also *Richdel, Inc. v. Sunspool Corp.*, 714 F.2d 1573, 1579-80, 219 USPQ 8, 12 (Fed. Cir. 1983) ("Most, if not all, inventions are combinations and mostly of old elements."). Therefore an examiner may often find every element of a claimed invention in the prior art. If identification of each claimed element in the prior art were sufficient to negate patentability, very few patents would ever issue. Furthermore, rejecting patents solely by finding prior art corollaries for the claimed elements would permit an examiner to use the claimed invention itself as a blueprint for piecing together elements in the prior art to defeat the patentability of the claimed invention. Such an approach would be "an illogical and inappropriate process by which to determine patentability." *Sensonics, Inc. v. Aerosonic Corp.*, 81 F.3d 1566, 1570, 38 USPQ2d 1551, 1554 (Fed. Cir. 1996). To prevent the use of hindsight based on the invention to defeat patentability of the invention, this court requires the examiner to show a motivation to combine the references that create the case of obviousness. In other words, the examiner must show reasons that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed. [emphasis added.]

There has been no such showing of those required reasons made in the rejection.

In particular, Applicants submit there is no teaching, suggestion, or motivation, either explicitly or implicitly, in either reference to replace the dummy light generator of Applicants Background art with the noise source (3) of Boot to arrive at Applicants' inventions recited in Claim 1. Thus, Applicants submit it is only through an impermissible hindsight

reconstruction of Applicants' invention that the rejection of Claim 1 can be understood.⁶

Similarly, Applicants submit that there is no motivation to replace the dummy light generator of Applicant's Background art with the features of Kagawa or Ryu to arrive at Applicants' inventions recited in Claim 1. Furthermore, Applicants traverse the finding that ASE 5 shown in Figure 3 of Kagawa is equivalent to Applicants claimed optical amplifier. Therefore, the combination of Kagawa with Applicant's Background art fails to disclose all the features cited in Applicant's claimed invention.

Accordingly, in view of the present amendment and in light of the previous discussion, Applicants respectfully submit that the present application is in condition for allowance and respectfully request an early and favorable action to that effect.

Respectfully submitted,

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⁶ MPEP § 2143.01 "Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge of one of ordinary skill in the art."

IN THE DRAWINGS

The attached sheet of drawings includes changes to Figs. 1-2. This sheet, which includes Figs. 1-2, replaces the original sheet including Figs. 1-2.

Attachment: Replacement Sheet (1)